

REMARKS

Claims 1-20 are pending.

Claims 1-20 stand rejected.

Claim 1 has been amended.

Claims 1-20 are hereby submitted for review and consideration.

No new matter has been added.

In paragraph 1 of the Office Action, the Examiner has rejected independent claim 1 under 35 U.S.C. § 102(e) as being anticipated by Sakuari (U.S. Patent No. 6,770,820). In paragraph 3 of the Office Action, the Examiner has rejected independent claim 1 under 35 U.S.C. § 102(e) as being anticipated by Chase (U.S. Patent Publication No. 2005/0089290). Also in a paragraph labeled “1.” after paragraph 6, the Examiner has continued the previous rejection under 35 USC § 103(a) as being unpatentable over Hasegawa et al. (U.S. Patent No. 6,755,995) in view of Hall (U.S. Patent No. 6,025,422), further in view of Ogawa et al. (U.S. Patent No. 4,417,018) for the reasons of record.

Applicant respectfully disagrees with the Examiner’s contention and submits the following remarks in response.

The present invention as claimed in claim 1, is directed to a flame-retardant cable having a transmission element, a flammable element and a flame-retardant coating layer

of cross-linkable resin surrounding the flammable element. The flame-retardant layer includes a polymer obtained from a polymerizable liquid composition. The polymerizable liquid composition contains at least a precursor for the polymer, where the precursor including functional groups selected from any one of acrylates, methacrylates, epoxies, vinyl ethers, allyl ethers, and oxetanes. The polymerizable liquid composition also includes at least one phosphorous group as an additional precursor such that said phosphorus group is chemically bonded to said polymer after polymerization.

Support for this is found in paragraph [0043] as noted in the corresponding U.S. Patent Publication No. 2004/0151906.

As noted in the prior remarks of record, in the prior art, phosphorus was blended with polymers to take advantage of its fire resistant properties. The present invention however, improves on earlier designs by having the phosphorus groups chemically bonded to the polymer.

In the prior amendment, Applicant presented the arguments that the prior art did not teach or suggest the phosphorus being chemically bonded to the polymer. Applicant continues this objection to the continued rejection of the claims on this ground.

In order to further clarify this point, Applicant notes that the phosphorus group, which is chemically bonded to the polymer, is included in the polymerizable liquid composition as one of the precursors so to achieve such chemical bonding during the polymerization stage.

Turning now to the substantive rejections, Applicant begins by noting that the cited prior art Chase (U.S. Patent Publication No. 2005/0089290), has a filing date of October 15, 2004 and an earlier provisional filing date of October 17, 2003. However, the

present application was filed on November 21, 2003 and claims the benefit of priority to French Patent Application No. 02 15065, filed on November 29, 2002 which is earlier than the earliest date of the Chase reference. For the record, Applicant notes that the present application as filed is simply a direct translation of the earlier French priority application, a Certified Copy of which was submitted on December 8, 2003. A translation of this priority document is provided in the appendix.

For at least this reason, Applicant requests that the prior art rejection of claims 1-20 in view of the Chase reference be withdrawn.

Turning to the newly cited Sakurai reference, a shielded flat cable is proposed whereby "it is preferred to *blend* a phosphoric acid methacrylate and meamine-based resin (to be refered to as "base resin" hereinafter) which is the main component of the above adhesive so as to improve adhesion." (See column 5, lines 19-23 of Sakuari). Furthermore, as noted in column 8, lines 16-19 Sakuari states, "When the above base resin is mixed with a phosphoric acid methacrylate and melamine-based resin, it can further improve adhesion between a resin such as polyimide or polyethylene terephthalate and a metal film." (emphasis added)

It is clear from this description, that the phosphorus taught in Sakuari, similar to the presviously cited prior art, is simply an additive that is blended to an existing polymer. Nothing in Sakuari suggests that phosphorus is chemically bonded to the polymer. Moreover, there is no teaching or suggestion in Sakuari that includes the phosphorus as a precursor for incorporation (via polymerization) into the polymer. Rather Sakuari relates to an additive that is blended to an existing polymer.

As such, the Sakuari reference does not teach or suggest the present invention as

claimed in independent claim 1. For example, there is no teaching or suggestion in Sakuari that discloses the phosphorus group is chemically bonded to the polymer. Likewise, there is no teaching or suggestion that phosphorus group is included as an additional precursor in the polymerizable liquid composition.

Turning to the continued rejection of the claims over Hasegawa and Hall and Ogawa, the Examiner notes that neither Hasegawa nor Hall teach phosphorus functional groups that are added to the composition, but that Ogawa teaches such functional groups and that it would be obvious to modify Hasegawa by the teachings of Ogawa to obtain the present invention as claimed.

Furthermore, in the current response to arguments, the Examiner defends this rejection by noting that “While applicants argue that the polymer of the instant invention contains phosphorus functional groups, it is not evident that the resultant flame retardant cable distinguishes over the prior art flame retardant cables containing phosphorus functional groups as a flame retardant. It is not evident on this record that unexpected or superior properties result and that said properties are directly related to the phosphorus groups being “chemically bonded.”

Applicant begins by noting that the display of “superior properties directly related to the phosphorus groups being ‘chemically bonded’” is not a proper standard of obviousness. Such an elevated standard implies that a synergistic effect is required to show non-obviousness. Although applicant may assert a synergistic effect (“unexpected or superior properties”) as a rebuttal to an established case of prima facie obviousness, in the present application, Applicant is asserting rather that the Examiner has not met that initial burden of raising a prima facie obviousness rejection in the first place.

As noted in the prior Amendments and Declaration under 37 CFR 1.132, one of ordinary skill in the art, at the time the invention was made could use the teachings of Hasegawa, Hall and Ogawa to arrive at the present invention as claimed. For the reasons of record, even if Hasegawa and Hall were combined the blended phosphorus additive of Ogawa the resulting wire/polymer would still not teach or render obvious all of the elements of independent claim 1, as the resulting wire/polymer would not teach or suggest the phosphorus group used as a precursor and thereby being chemically bonded to the polymer.

For at least this reason, Applicant reiterates the previous arguments of record and requests that the rejection of the claims be withdrawn.

However, as noted above, in order to clarify the scope of the claims, claim 1 recites that the polymerizable liquid composition also includes at least one phosphorous group *as an additional precursor* such that said phosphorus group is chemically bonded to said polymer *after polymerization*.

The cited prior art, namely Ogawa (used to form this portion of the rejection) does not show the phosphorus as a precursor that is chemically bonded to the polymer as a result of polymerization (by inclusion as a precursor). As noted in the previous Amendments of record, in Ogawa any phosphorus is simply blended to an existing polymer.

For at least this reason as well, Applicant requests that the rejection of the claims over Hasegawa, Hall and Ogawa be withdraw, because, even if combined as suggested by the Examiner, the resulting wire/polymer would still not teach or suggest that the polymerizable liquid composition also includes at least one phosphorous group as an

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additional precursor such that said phosphorus group is chemically bonded to said polymer after polymerization.

In view of the forgoing, Applicant respectfully submits that the present invention as claimed is now in condition for allowance, the earliest possible notice of which is earnestly solicited. If the Examiner feels that a telephone interview would advance the prosecution of this application she is invited to contact the undersigned at the number listed below.

Respectfully submitted

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Dated: 5/30/07

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